UNION CARBIDE

—Y-12 BULLETIN

A Newspaper For Y-12 Employees of Union Carbide Corporation—Nuclear Division

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120008

Y-12 Story

Series Begins Relating Plant's History And Place In Today's Complex Structure

(Editor's Note: Following is a talk made by Y-12 Plant Superintendent R. F. Hibbs back in the summer. The speech was delivered at the U. S. Army Nuclear Science Seminar, held in Oak Ridge. We believe it will be of interest to many Y-12ers. It will run in installations in the next issue or two of the Bulletin.)

Y-12 is not only one of the largest manufacturing installations in the state of Tennessee, but is also one of the largest and most versatile of the Atomic Energy plants. It is operated for the U.S. AEC by Union Carbide Corporation.

★ ★ ★ 111246 ★ ★ ★

ELIGA TILLEY, CASTING DEPARTMENT, demonstrates uranium metal buttons, produced by the gaseous diffusion process. The facilities of Y-12 provide for the preparation, casting, rolling, forming, machining, assembly and product certification of the U-235.

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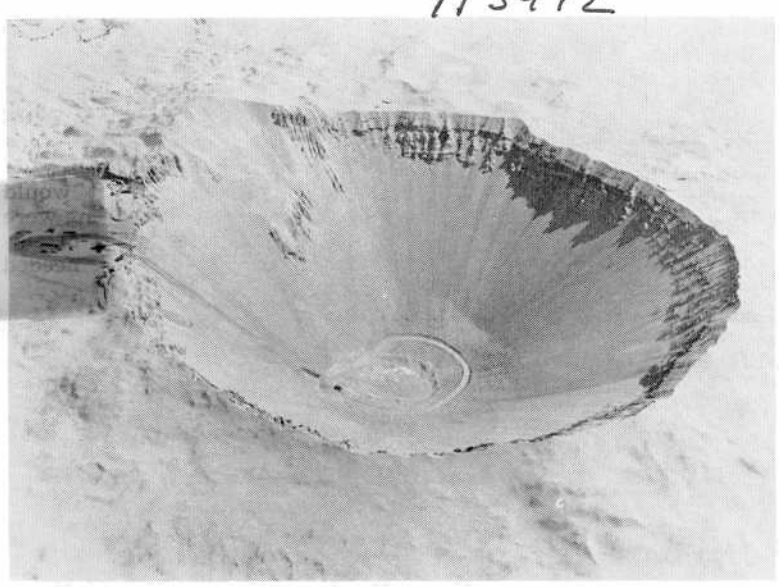


THE SEDAN CRATER AT THE NEVADA PROVING GROUNDS is shown in this aerial photograph. Components for the device which produced this excavation were made in Y-12.

Y-12 is now the only Oak Ridge installation which retains its old military code name. Since the end of World War II, both the Oak Ridge National Laboratory (formerly designated as X-10) and the Oak Ridge Gaseous Diffusion Plant (formerly called K-25) have taken names that are more descriptive of their principal activities. Many descriptive names for Y-12 have been proposed, but the variety of activities almost precludes a simple meaningful title, so the old code name has been retained.

Plant Background

Now a little background on Y-12: The Plant was built for the U.S. Army Corps of Engineers in 1943 to separate the fissionable isotope of uranium, U-235, by the electromagnetic process. This process was developed by the late Dr. E. O. Lawrence of the Radiation Laboratory in Berkeley. The process was extremely complicated. It was necessary to provide for the chemical production of tons of uranium compounds suitable for vaporization, facilities for ionizing this vapor, and tremendous magnets to separate the uranium ions according to their mass. The separated ions were collected and then chemically purified to the final form for military use. An original capital investment of over 400 million dollars and a peak operating force of 23,000 people were required for this effort.

Uranium-235, separated at Y-12, was the fissionable material used in the world's first uranium bomb, Little Boy, which was detonated on August 5, 1945 (Hiroshima, Japan). After World War II, the electromagnetic production process was discontinued in favor of the more economical gaseous diffusion process.

Covers 500 Acres

Since those early war years, Y-12 has evolved into a highly sophisticated manufacturing and developmental engineering organization. The Plant occupies approximately 500 acres and is located immediately adjacent to the city of Oak Ridge. It is about two and one-half miles long and one-fourth mile wide. The combined floor space of its several hundred buildings is approximately four and one-half million square feet. Today, Y-12 employs about 4,500 people, including some 500 scientists and engineers and 1,200 to 1,500 skilled craftsmen.

These people, together with the necessary supervisory and support personnel, operate a variety of facilities to accomplish the programs approved by the AEC. The combination of skilled personnel and modern facilities is currently being applied to four major responsibilities: (1) production of atomic weapons components, (2) fabrication support for weapons design agencies, (3)

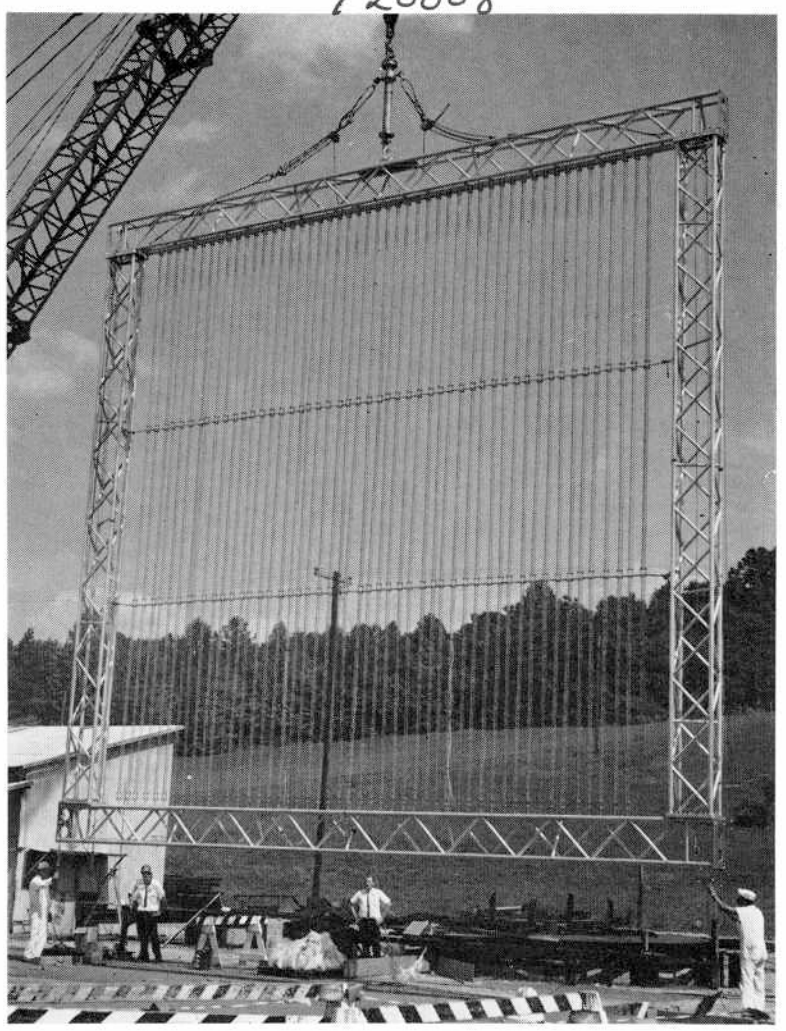
Continued on Page 4

ACCEPTABLE GROUNDS

A fellow we know divorced his wife because she was always complaining about the housework. Seems she didn't like the way he was doing it.

CHEMISTRY IS BASIC

Chemistry is basic for professional training in more areas of pure and applied science and in the fundamental and experimental sciences.



RESEMBLING A GIANT HARP, this test rig was recently fabricated in Y-12 for the U.S. Navy. The rig will be used in deep water studies to be conducted by the Navy.

Huge, Deep-Water Rig Designed Here For Navy

The Oak Ridge Y-12 Plant has designed, fabricated and tested to U.S. Navy specifications, a large test rig to be used by the Naval Research Laboratory, Washington, D.C., in experiments aimed at improving underwater calibration techniques.

The 4,800-pound rig, approximately 40 feet by 40 feet and 18 inches thick, consists of 50 acoustic line supports of two-inch-diameter, stainless steel, expanded-metal half-cylinders attached to an aluminum frame. In appearance, it vaguely resembles a giant harp.

Fabrication of the device required over 4,000 precision welds, many of which were performed by semi-automatic welding procedures.

Following fabrication, the rig was assembled at the Y-12 Plant for strain gauge tests. The rig then was disassembled and shipped to the Navy.

The Naval Research Laboratory will use the device in sound calibration studies to be conducted in a deep, clean-water lake somewhere in the United States. A barge will lower the rig, in a vertical position, to a depth of several hundred feet beneath the surface.

Over 2,300 small ceramic sensors attached to the rig will detect signals from a transducer. Data obtained should be useful in drawing more accurate profiles of underwater sound sources.

Y-12 was selected to design and fabricate the test assembly because the plant's diversified experience and specialized capabilities were required to meet Navy specifications.

BULLETIN

"Boss" Roger F. Hibbs was named "Boss-of-the-Year" by the Oak Ridge Chapter of the National Secretaries Association. Details follow next week.

Directors Declare 50¢ Dividend For Quarter

The board of directorrs of Union Carbide Corporation has declared a quarterly dividend of fifty cents per share on the outstanding capital stock of the corporation, payable December 1, 1966, to stockholders of record November 4, 1966. The last quarterly dividend was fifty cents per share paid September 1.

Payment of this quarterly dividend on December 1 will make a total of $2 per share paid in 1966 on the outstanding shares of the corporation. In 1965, the total amount paid was also $2 per share, adjusted to reflect the two-for-one stock split in May, 1965.

FULL SPEED AHEAD

Plans to build a new dam on the Little Tennessee have brought out a rash of bumper stickers from conservationists, fishermen, hunters, etc. that say "Save the Little T." Now comes an opposition sticker that merely reads: "Dam the Little T!"

The Bulletin

Published Weekly For The Y-12 Employees Of UNION CARBIDE CORPORATION

UNION CARBIDE

NUCLEAR DIVISION

JAMES A. YOUNG ..... *Editor*

Member *Appalachian Industrial Editors' Association*

American Association Industrial Editors

OFFICE
Post Office Box Y
Oak Ridge, Tenn. 37830
Bldg. 9704-2 Room 137
Telephone 3-7100

ACS Will Hear Lab Specialist

Dr. Sheldon H. Moll

The Analytical Group of the American Chemical Society will meet next Wednesday, November 16. The 8 p.m. meeting is set at the Oak Ridge Associated Universities Training Building, near the AEC Headquarters.

Dr. Sheldon H. Moll, laboratory director, Advanced Metals Research Corporation, will speak on "Practical Applications of the Electron Probe Microanalyzer."

As a result of its ability to perform a point by point chemical analysis of a sample volume as small as 1-2 cubic microns, the microprobe has been useful in solving problems concerned with compositional homogeneity, concentration or diffusion gradients, foreign inclusions, unknown phases, corrosion products, etc., in most solids or semi-solids. A brief discussion of the instrumental components and operating techniques will be presented.

Dr. Moll received his S.B., S.M. and PhD degrees in Physical Metallurgy from the Massachusetts Institute of Technology. He has been principally concerned with the application of the electron probe and the general field of physical metallurgy, singe going with Advanced Metals in 1959.

All ACS members and interested parties are invited to next Wednesday's meeting.

Canadian Plant Expands Facilities For Film

Construction recently began on Union Carbide Canada's eighth polyethylene film manufacturing-converting facility. The plant, with an initial floor area of 14,000 square feet, is located at Amherst, Nova Scotia. It is expected to supply the company's markets in the Maritime Provinces.

Pianist Rosen Concert Saturday

An outstanding piano concert highlights the Oak Ridge Civic Music Association's Saturday, November 12 presentation. Charles Rosen's highly individual keyboard virtuosity and deep musicality have earned him acclaim as one of the most brilliant American pianists of today. The concert is slated for Saturday, 8:15 p.m., at the Oak Ridge High School Auditorium.

Born in New York of a musical family, Rosen displayed his precocity when at the age of four, fascinated by the sounds of music lessons from the apartment of a piano-teacher neighbor he walked in and announced that he too could do what the pupil of the moment was doing. He later became a pupil of the late pianist Moris and Mmd. Rosenthal. In addition to studying under these and other eminent teachers he received a liberal arts education at Princeton, earning MA and PhD degrees in French literature.

Rosen started his career by making the first complete recording of Debussy Etudes. Virgil Thompson, New York Herald Tribune, declared his LP recording would undoubtedly be "the definitive record of these works for many years to come." Rosen's recording since then reveal an affinity for both the Romanticists and the Moderns. His performances on the concert stage have received enthusiastic praise from critics and audiences alike.

In Oak Ridge he will play Mozart's Sontata in D; Beethoven's Sonata in D minor; Chopin's Nocturn in D flat and Polonaise in F sharp minor; three Preludes by Debussy; and J. Strauss-Rosenthal's Carnival de Vienne.

Season tickets may be used for Saturday's concert. Individual tickets will also be on sale at the door prior to the concert.

United Fund Helps The Mentally Ill

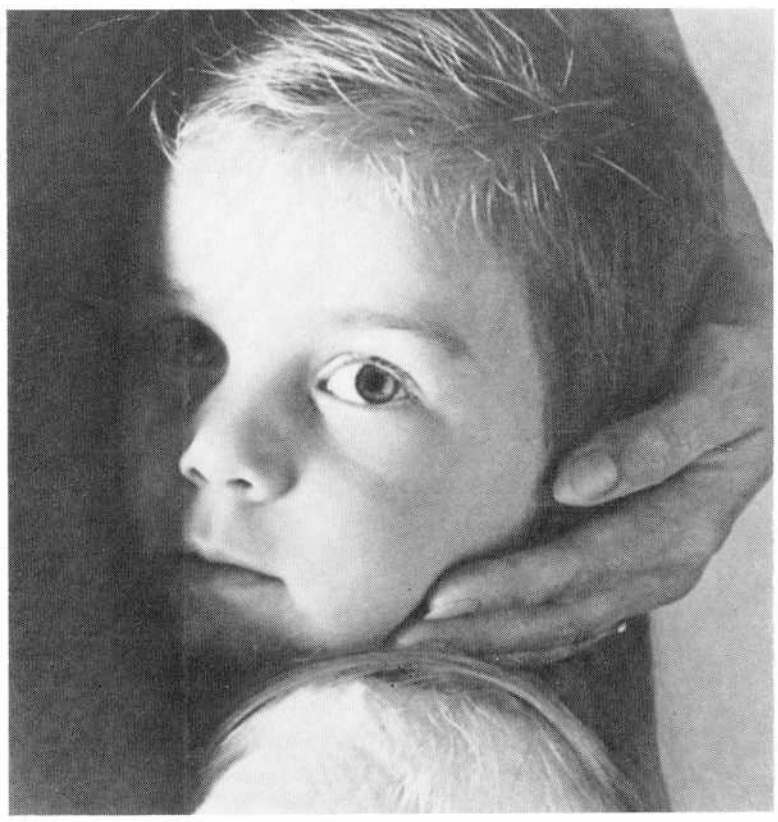
One of every 10 persons in our society suffers from some form of mental illness or emotional disturbance. Yet this is one of the least understood problem areas in our culture. Recently, giant strides have been made toward a better public understanding, improved facilities and methods of treatment of the mentally ill. Anderson and Roane counties have one of the finest mental health centers in the state, the only one in Tennessee offering a 24-hour emergency service program. The United Fund will provide $14,000 toward the operation of the Mental Health Center this year. You might give it some thought when you pledge your 'needed share' in the United Fund.

ASM Meeting Set Here Next Wednesday

The Oak Ridge Chapter of the American Society for Metals will meet next Wednesday, November 16, at the Holiday Inn in Oak Ridge. The social hour begins at 6:15 p.m., the dinner at 7, and the technical session at 8.

ASM members will hear Dean W. N. Lacy, School of Architecture, University of Tennessee, speak on "Recent Advances in Architecture."

Since this technical talk will emphasize "the home," wives and other ladies are invited. Dinner reservations may be made through Bill Martin, extension 3-1675, or Les Dotts, Knoxville telephone 588-8904.



HOW DO YOU THANK SOMEONE FOR LOVE? Y-12ers sent their United Fund final reports in last week. A total of $72,383.40 was pledged or raised for the various United Funds in this area. Anderson County took the bulk of the funds with a $38,187.60 total. This year's fund was a new high in moneys raised.

Final United Fund Report Shows $72,000 Given By Y-12

Y-12ers upped their United Fund giving this year by some six per cent . . . as final reports last week show a total of $72,383.40 raised. Per capita giving rose from $15.66 to $16.34. Although this represents only 83 per cent of the plant's goal, it is considered a success by drive chairmen.

The bulk of Y-12's giving, of course, went to Anderson County. Distribution of funds was as follows:

Anderson	**$38,187.60**
Knox	**19,017.28**
Loudon	**2,373.80**
Morgan	**1,688.98**
Roane	**1,094.80**

Approximately 94 per cent of the plant's population participated in this year's giving.

Honor departments pledging more than their "needed share" are shown below:

Accounting & Budget
Production Scheduling
Development Operations
Ceramics & Plastics
Mechanical Development
Process Analysis
Engineering Division
Mechanical Design
General Mechanical Engineering
Instrument Engineering
Tool Engineering
Special Projects
Safety
Training
Labor Relations
Benefit Plans
Cafeteria
Machine Tool Engineering
Material Control
Security
Statistical Services
SS Control
Radiation Safety
Quality Liaison
Secondary Quality Control
Graphics & Public Information
Superintendents
Process Analysis
Electrical Engineering
Specifications & Systems
Metallurgical Development
Laboratory Development
Chemistry Development
Mechanical Development
Machine Tool Engineering
Maintenance Division
Estimating & Tooling
Development Operations
General Shop Job Liaison
Industrial Relations Administration
Publications
Recreation
Maintenance Administration Services
Plant Records
Materials & Services Administration
H-1 Foundry Coordination
Shift Superintendents

Five complete divisions went over the goal in the drive . . . Superintendents, Accounting and Budget, Development and Engineering along with Product Engineering. (Product Engineering is incorporated in Engineering in the table below.)

From all the solicitors . . . from the division coordinators . . . from the drive chairman, to all Y-12 goes a big thanks. The agencies' thanks also are there, as many services will be rendered in our communities that would have otherwise gone begging were it not for the willingness of employees to give their needed share.

Y-12's UNITED FUND CAMPAIGN

FINAL REPORT

Division	% Participating	% of Goal	Gave
Accounting, Budget & Scheduling	100	112	$ 1,094.76
Assembly	95	75	2,751.78
Development	98	106	5,850.88
Engineering	99	106	8,850.71
Fabrication	86	73	14,261.90
Industrial Relations	100	97	1,326.30
Maintenance	97	70	14,218.00
Materials & Services	97	70	2,107.86
Metal Preparation	98	85	7,815.84
Shift Superintendents & Utilities	95	65	2,777.02
Superintendents	100	116	1,681.44
Technical Services	94	85	8,385.15
TOTAL PLANT	**94**	**83**	**$72,383.40**

As November gets a toe-hold on the calendar of 1966, many more Y-12ers celebrate milestones with Union Carbide Corporation. Congratulations.

20 YEARS

Clayton L. Matthews, Special Projects, November 14.

Herbert C. Dickinson, Material Specimen Shop, November 14.

15 YEARS

Coy L. Gossage, Research Services, November 9.

James F. Chapman Sr., H-2 and F-Area Shops, November 9.

Herman J. Hall, Stores Department, November 12.

Freddie Hoskey, Janitors Department, November 13.

Glen A. Tedder, General Weld Shop, November 13.

Leslie L. Spear, General Machine Shop, November 13.

Ulysses E. Leffew, SS Warehousing and Shipping, November 14.

John D. Morris Jr., General Expediting and Auxiliary Services, November 14.

Coy N. Crawley, Electrical Department, November 15.

John U. Hicks, Stores Department, November 15.

Charles H. Bowman, General Shop Job Liaison, November 15.

Carbide Cooperates To Develop Huge Cell

Union Carbide Corporation is cooperating with General Motors to develop the world's largest fuel cell system for a new motor van. The experimental "Electrovan," in its first public demonstration October 28, marked the culmination of nearly three years of cooperative effort by the two companies. The electricity used to power the Electrovan is supplied by 32 hydrogen-oxygen fuel cell modules and produced by the Electronics Division. Working with the division, The General Motors engineering staff adapted the fuel cell system for vehicular tests.

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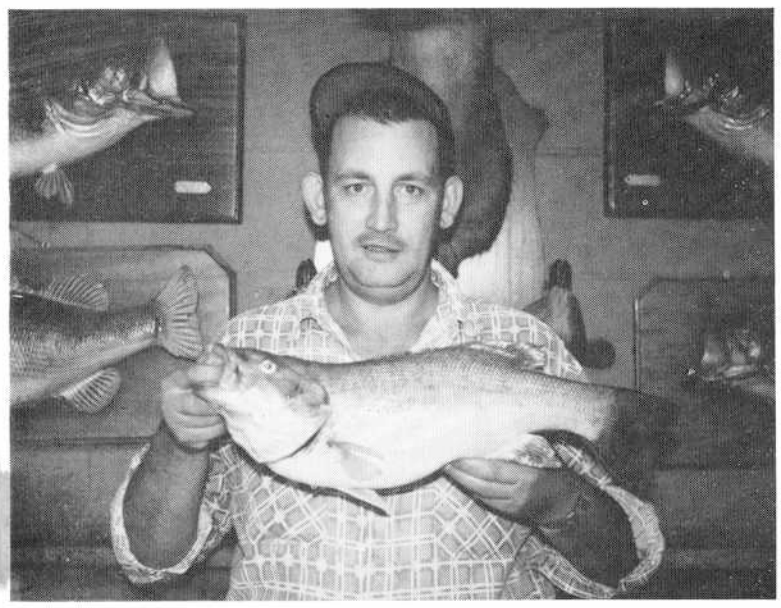


OCTOBER BRINGS OUT THE SMALLMOUTH says B. O. Miller, Chemical Services. This beauty was landed in early October in the waters of Norris Lake. A live minnow proved the demise of this nice one.

Gridiron Action Sees Chemistry In Action

One might assume that very little chemistry could be involved in a game where two 11-man teams charge each other like onrushing buffaloes as one side tries to reach a goal line while the other side tries to prevent it. But chemical products do play a vital role insofar as football player's clothing and protective gear are concerned.

Uniforms, jerseys, pants, padding, helmets, underclothes, socks, parkas, blankets, capes and jackets manufactured from modern chemically - produced materials provide maximum protection for the players in a game recognized as organized mayhem. These products are also durable, colorful, and they help make football a faster more exciting game — to the delight of owners and fans alike.

Ping-Pong Play Is Postponed One Week

Due to a conflict last Monday night, the Ping Pong (or Table Tennis) League did not play.

Play was expected to resume on schedule this past Monday, November 7.

Safe ways are happy ways.

Recreation calendar

Friday, November 11

BASKETBALL: 4:30 p.m. Deadline for entering teams in 1966-67 League.

Sunday, November 13

SKEET TOURNAMENT: 1 p.m. Oak Ridge Sportsman's Association. New Rules. Newcomers welcome!

Monday, November 14

BOWLING: 5:45 p.m., C League, Ark Lanes.

TABLE TENNIS: 7 p.m., Wildcat's Den.

Tuesday, November 15

PHYSICAL FITNESS: 7:30 p.m., Oak Ridge High School Gymnasium.

Wednesday, November 16

SMALLBORE RIFLE LEAGUE: 7 p.m., Clinton Indoor Range.

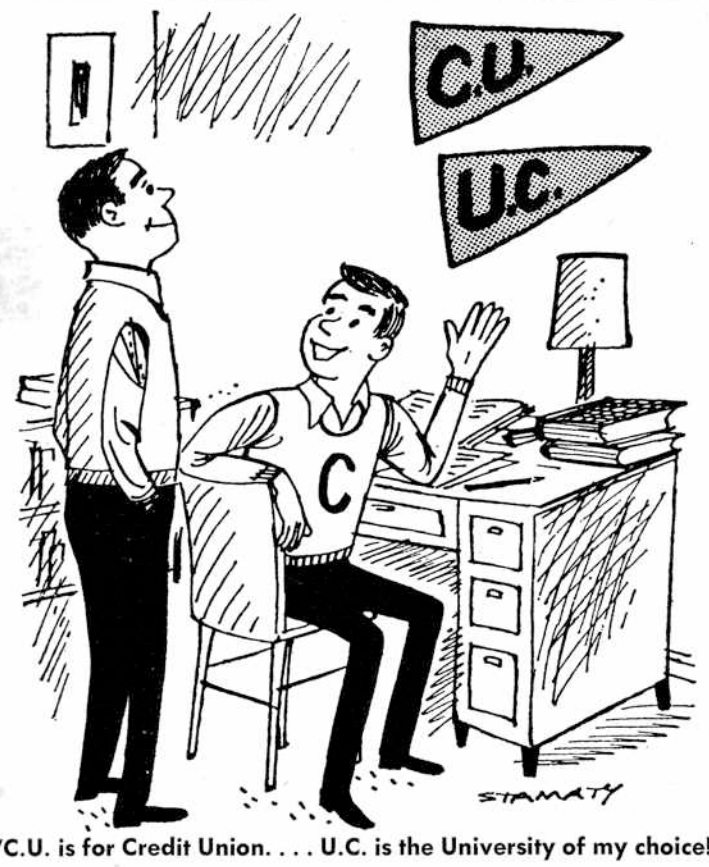
BOWLING: 8 p.m., Mixed League, Ark Lanes.

Thursday, November 17

BOWLING: 5:45 p.m., Classic League, Ark Lanes.

BADMINTON: 7 p.m., Jefferson Junior High School Gymnasium.

Many a man is carried out feet foremost because he rushed in headlong.



'C.U. is for Credit Union. . . . U.C. is the University of my choice!'

Rounders Edge Up In C League

The Rounders moved up within striking distance of the top berth in C Bowling circles last week by downing the Parbusters for the full count of four. The other sweeps of the week saw the Strikers strike the Invalids and the Hi-Lifers highball it past the Rodders. Three points went to the Sunflowers over the Badgers, the Big Five past the Rollmasters and the Fireballs over the Royal Flush.

George Cantrell, Strikers, struck on singles, rolling a 217 scratch game. E. H. Bryant, Invalids, posted a 244 handicap single. Cantrell's series of 623 scratch, 701 handicap were high.

The Rounders rounded off singles 900 scratch, 1028 handicap. The Sunflowers scored high series in scratch count of 2618 . . . and the Rounders returned to the boards with a 2972 handicap series.

League standings follow:

Team	W	L
Badgers	23	9
Rounders	22½	9½
Sunflowers	22	10
Strikers	18	14
Big Five	17	15
Rodders	15	17
Fireballs	14½	17½
HiLifers	14	18
Royal Flush	13	19
Rollmasters	12	20
Parbusters	11	21
Invalids	10	22

Y-12 22-Team Down In Defeat

The eighth firing in the 22 Calibre Rifle League saw Y-12 suffer defeat at the hands of both X-10 and the Independents.

Leading the Y-12 squad was W. D. Phillippi firing a 290.016 handicap score; followed by Bert Searles, 289.658; and B. L. Powers 289.417. Powers' 287 was high in scratch counting, followed by J. L. Huff and Searles each with 286 and 285.

The X-10 team score in scratch firing 1423; Y-12, 1410; and Independents, 1415. In handicap firing the teams fared thusly: Independents, 1448.068; X-10, 147.002; Y-12, 1443.379.

League standings follow:

Team	Points
X-10	36
Y-12	26
Independents	22

ORGDP Begins 'Oyster' Shipment

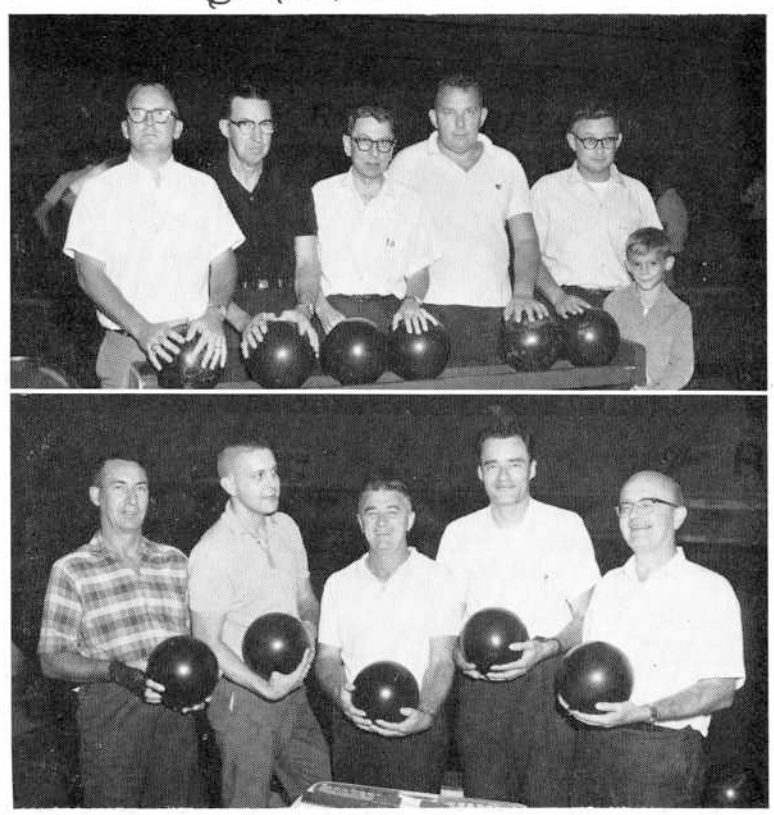
Enriched uranium having a value of more than $18 million is currently being shipped from Oak Ridge Gaseous Diffusion Plant. A series of shipments began earlier last month for approximately 256,075 pounds of enriched uranium for eventual use as fuel for the Oyster Creek Nuclear Power Plant at Toms River, New Jersey, about 35 miles north of Atlantic City.

The shipment of the uranium, which consists of three different enrichments, is expected to be completed during December. The material is being shipped as uranium hexafluoride to the General Electric Company, San Jose, California, for further processing and fabrication into reactor fuel.

Jersey Central Power and Light Company's Oyster Creek Nuclear Plant, currently under construction, will be of the boiling water type and will provide 515,000 electrical kilowatts.

RAISON D'ETRE

The reason rock-n-roll singers are so young is that if they were any older they'd be embarrassed.



MORE CLASSIC TEAMS SMILE FOR THE BIRDIE before going into recent action. In the top photograph are the Smelters . . . Jim Bryson, A. V. Bible, John Harding, captain; Howard Horne, Al Fischer and son Teddy. In the lower picture are the Tigers, Elbert Scott, Jimmy Davis, Captain Frank Tiller, George Bailey and R. D. Smith.

6-13159

Bumpers Still Lead Tight Race For Classic Bowling's First Half

The Bumpers, still the team to beat in the Classic Bowling League, stayed atop the heap last week with a three-point win over the Splinters. Four points went to the up-and-coming Tigers over the Eagles, and the Has Beens superior to the Eightballs.

Other three-point victories went to the Markers marking better than the Wasps, the Rippers 'round the Rebels, and the Screwballs past the All Stars. Two-and-one-half points went to the Cubs over the Smelters, while the Playboys and Swingsters tied with two each.

Ray Galford, Bumpers, rolled a 233 scratch single; Hugh Richards, Rippers, roared forth with a 264 handicap game. Galford's 581 scratch series was high; Richards' 652 handicap series was ditto.

The Swingsters swung into high scratch counting, singles of 934, series of 2572. The Playboys parlayed handicap singles into a high of 1085, and the Rippers ripped into handicap series highs with 2951.

League standings follow:

Team	W	L
Bumpers	24	12
Tigers	22	14
Smelters	21½	14½
Markers	21	15
Swingsters	20	16
Rippers	20	16
All Stars	19	17
Has Beens	19	17
Screwballs	18	18
Cubs	17½	18½
Eightballs	17	19
Rebels	17	19
Wasps	16	20
Playboys	14	22
Splinters	13	23
Eagles	9	27

New Leaders Take Mixed League Helm

The Mixed Bowling League got new leaders last week as the Roses 'N Thorns and Rollers stand now deadlocked up on top. The R 'N T crowd took four from the Hits & Misses; the Rollers won four from the Goofers.

The Mustangs-Twisters, Alley Cats-Novices duels ended in draws, each team taking two.

Mildred Morris, Mustangs, mixed them up to take all highs . . . 203 scratch, 250 handicap in singles; 469 scratch, 610 handicap in series.

The Rollers' Charlie Gillihan came through to sweep honors also, singles of 214 scratch, 242 handicap; series of 530 scratch, 614 handicap.

The Rollers rolled high scratch singles of 653; the Twisters hit the boards with 832 handicap singles; while the Rollers returned to the boards with series highs, 1861 scratch, 2314 handicap.

League standings follow:

Team	W	L
Roses 'N Thorns	21½	14½
Rollers	21½	14½
Mustangs	20	16
Novices	20	16
Alley Cats	18	18
Twisters	17	19
Goofers	16½	19½
Hits & Misses	9½	26½

Swimming Pool Reactor Power To Be Doubled

Oak Ridge National Laboratory has announced plans to double the power level of the world's first swimming pool reactor. The operating power level will be raised to two megawatts and will be equipped with additional research facilities after current remodeling is completed. The Bulk Shielding Reactor (BSR) was used by the laboratory for shielding studies related to the development of nuclear powered submarines. It also served as a model for the reactor built for the first Atoms for Peace Conference in Geneva in 1955, as well as for water-cooled research reactors constructed at several universities. In recent years, the reactor has been used for irradiation studies.

"How much do you want for that tree? I need it for evidence!"

UNION CARBIDE CORPORATION
NUCLEAR DIVISION
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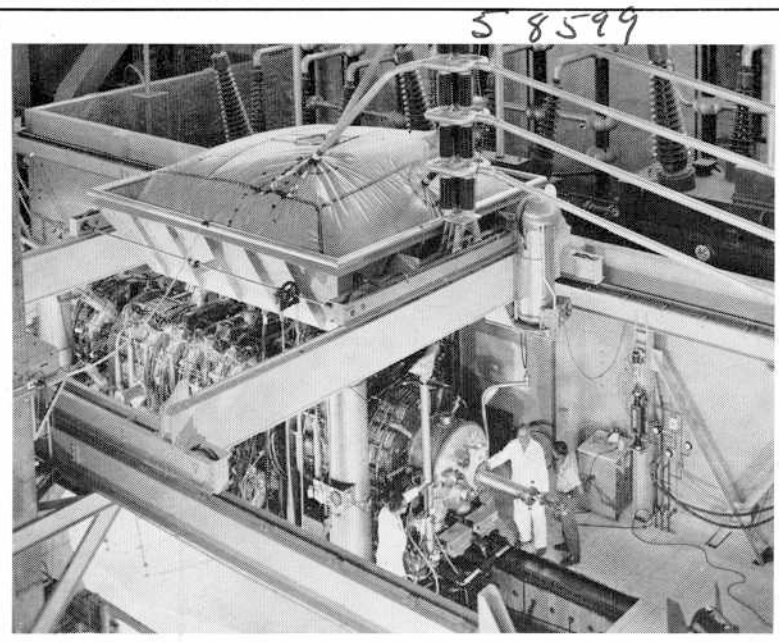

EXPERIMENTAL WORK IN PLASMA PHYSICS is done on the DCX-2. A major responsibility of Y-12 is to provide support to the Oak Ridge National Laboratory and the efforts of the four divisions from ORNL located in Y-12.

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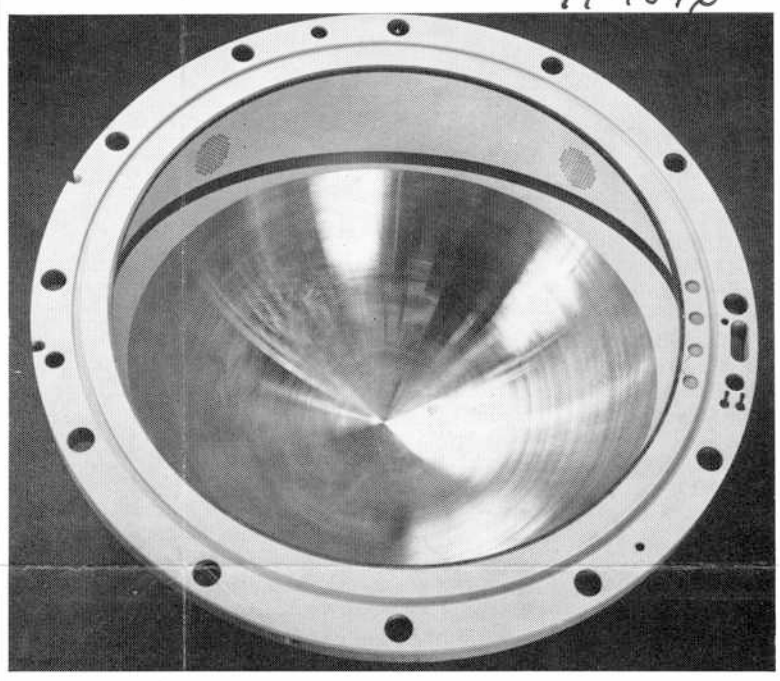

THE NICKEL-PLATED SPHERE was fabricated in Y-12 for the Massachusetts Institute of Technology for use by the U. S. Air Force in inertial guidance systems. Part of Y-12's responsibility is the support and assistance to other government agencies.

Y-12 Credit Union's Open House Welcomes More Than 400 Visitors

More than 400 members and guests registered for the Sunday, October 30 Open House at the Y-12 Credit Union. Despite the beautiful Fall weather, the football games in color on TV, the crowds thronged in to visit the handsome facilities.

Prominent people in the credit union movement in Tennessee and elsewhere also came as guests. W. B. Jenkins, President, Tennessee Credit Union League, Inc., Knoxville, with Mrs. Jenkins; T. C. Arnold, past president, and Mrs. Arnold; Gene Kimbrall, CUNA Mutual Insurance Society, Madison, Wisconsin, regional representative from Cattanooga, and Mrs. Kimbrall; Bob Moses, CUNA Mutual representative from Nashville, and Mrs. Moses; Art Webb, CUNA Mutual, Madison; Manley Hood, president of the Knoxville Chapter of Credit Unions, Fulton - Sylphon Division of Robertshaw Controls, Knoxville, and Mrs. Hood; Bayard Addington and Mrs. Addington, who is treasurer-manager of the Mason-Dixon Credit Union, Kingsport; V. Lamar Eaker, manager-director of the Tennessee Credit Union League, Chattanooga, and Mrs. Eaker; and Glen Gray, field representative for the TCLU, and Mrs. Gray.

Big door prize winners among members were: Roberta Southern first prize of $50; Faye Guettner, $25; Audria Burdett, $10; and Dot Richardson, V. Defenderfer, and H. T. Christie, each with $5.

Guest-winners include Anna R. Cate, first prize of $10; Mrs. C. W. Walker and Glen Gray for $5 each.

Although Y-12 Credit Union has been in its member-owned building for five years, it still seems like a new building. And it still looks new!

Desks of information were set up in various parts of the offices for questions from members and visitors. A special desk was set up for new members. Movies were shown, giving the many advantages of the services of the credit organization.

The Credit Union's "Committee of One Dozen" was on hand to greet old and new friends.

Coffee and cookies were served the guests in the ground level offices. "Let's do this more often," commented one of the members attending the affair.

Espionage Brings Focus On Security Efforts

Security-conscious Y-12ers focused recently on the arrest of a sergeant in the Air Force in California. Caught in correspondence with a Red agent, the serviceman held a top secret clearance.

While it is doubtful that any employee is going to intentionally pass information on to an alien power, carelessness can accomplish the same objective. A redoubling of our security efforts can prevent vital information from flowing into the wrong hands.

Remember, security is part of our job . . . a very vital part.

SAFETY SCOREBOARD

The Y-12 Plant Has Operated
18 Days Or
498,000 Man-Hours
(Unofficial Estimate)
Through November 6
Without A Disabling Injury
Safety Is Not
A 'Sometimes' Thing

Ride wanted or will join car pool from Sharp Road, Powell, to West Portal, F. Shift. W. A. Kramer, plant phone 3-7074, home phone Powell 947-6384.

Riders wanted or will join car pool from vicinity of Senators Club, Knoxville, Alcoa Highway section, to North Portal, straight day. A. W. Maxey, plant phone 3-7030, home phone Knoxville 577-7432.

One or two car pool members wanted from Rocky Hill Community, Knoxville, to any portal, straight day. Charles Sampson, plant phone 3-5376, home phone Knoxville 588-5641.

Many Union Carbide Products Are Unseen

Prestone Anti-Freeze, Eveready batteries and flashlights, 6-12 Insect Repellant and Glad plastic sandwich and utility bags, are Union Carbide products familiar to almost everyone. But there are many more . . . but the majority of Union Carbide's products are unseen by the general public in everyday life — because they are the raw materials of industry. These unseen Carbide products— the building blocks used by thousands of manufacturers — help fill human needs for food, clothing and medicines, faster and safer transportation; quicker communication; and more attractive, more comfortable homes.

TODAY'S PARADOX

What shall we call an age that develops the stainless steel razor blade and the beatnik all in one whack?

Y-12 Story: History And Place In Today's Complex Structure

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support for the Oak Ridge National Laboratory, and (4) support and assistance to other government agencies.

Principle Responsibility

The principal responsibility is the production of components for nuclear weapons. During the electromagnetic era, the product form was a highly purified compound of uranium enriched in U-235. Following the war, the U-235 produced by the gaseous diffusion process was reduced to metal "buttons." Shortly thereafter, casting and machining of this material was started on a small scale. By the early fifties Y-12 had been converted into a complete materials processing organization equipped with facilities for materials preparation, casting, rolling, forming, machining, assembly and product certification.

The second major responsibility of the Plant is the fabrication support provided to the AEC weapons design laboratories: the Los Alamos Scientific Laboratory at Los Alamos, New Mexico; the Lawrence Radiation Laboratory at Livermore, California; and the Sandia Corporation at both Albuquerque, New Mexico and Livermore, California. Y-12 produces, for these organizations, components for most of the test devices fired. For example, major components in units fired in the Pacific tests were fabricated in Y-12 as well as for the majority of units currently being tested in Nevada, including Plowshare devices for the peaceful use of atomic explosives. Components for the device which produce the Sedan crater at NTS were made in Y-12. Frequently, this service is provided on lightning schedules, often requiring work from meager information. This type of operation is made possible by the diversity and flexibility of the facilities and staff using such modern scheduling and production control systems as critical path scheduling and modern engineering communication aids. The Plant's varied resources and ability to react quickly enables it to serve as an extension of the design laboratories in many fields.

Support To Laboratory

The third major responsibility for Y-12 is to provide support to the Oak Ridge National Laboratory. There are about 900 ORNL employees located in Y-12. These scientists and engineers are working in four ORNL divisions: Biology, Reactor, Thermonuclear, and Isotopes. In addition to the usual housekeeping and maintenance services, all the facility engineering required by these groups is supplied. These efforts range in complexity from simple office construction to the design of complex cancer laboratories and elaborate equipment required for experimental work in plasma physics.

A fourth, and more recent activity at Y-12 is to provide support and assistance to other governmental agencies. In the past few years the Federal Government has spent about 10 billion dollars a year in conducting a variety of research and development programs. Most all R & D activities entail an "end product" requiring first, engineering and ultimately, quality hardware. Y-12 is organized and equipped to make valuable contributions to the various R & D programs conducted by other governmental agencies. For example, a nickel-plated, 11-inch diameter sphere was fabricated here for the Massachusetts Institute of Technology for use by the U.S. Air Force in inertial guidance systems. Support or service to other government agencies is controlled and approved by the AEC on an interagency agreement basis whenever time or technology considerations warrant the utilization of Y-12's various capabilities. Interagency work currently includes providing engineering assistance and hardware for programs involving the Army, Navy, Air Force, and National Aeronautical and Space Administration, as well as several universities and industries operating under government contracts.

(Next week some of the major fabrication methods utilized in Y-12 will be described.)

Booze Intake Is Big Safety Factor

How drunk you get depends on how fast the alcohol gets into the bloodstream from the stomach. That rate can vary. How much you drink in how short a time is a big factor.

A stomach full of food cuts the absorption rate in about half. The total effect is the same but it spreads the shock over a longer period of time. The strength of the drink matters, too. For instance, a 20 per cent solution of alcohol — the strength of an ordinary highball — works the fastest. Alcohol in gin and champagne is absorbed faster than that in whiskey; but that is trifling.

Simplifying the above, a couple of ounces of bourbon taken on an empty stomach will be absorbed in about 10 minutes. Four ounces will be absorbed in half an hour . . . and eight ounces will be absorbed in less than an hour and a half.

The liver is the instrument of sobriety. It will oxidize alcohol at the rate of about one-third of an ounce per hour. No exceptions. According to the Yale school of alcoholic studies, this is the rate. A couple of ounces of pure alcohol in the average size man will yield about .1 per cent alcohol.

See the effects of these minute portions . . . .05 per cent: some release of inhibitions; .1 per cent: slight staggering, fumbling with car keys; .2 per cent: mid brain affected . . . emotional behavior largely uncontrolled; .3 per cent: stuporous . . . little comprehension of world around; .4 per cent: coma; and .6 to .7 per cent: death.

So the big secret in drinking hard liquors is that you should count your drinks . . . and space them over a period of time. But tests also show that even a couple of belts will cut a man's ability to figure by as much as 50 per cent. So, in the dim fog of an alcoholic evening . . . nobody's ability to count drinks is worth much anyway.

When in doubt, don't.